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Harmony with Nature

Report of the Secretary-General

Summary

The present report, submitted pursuant to the request of the General Assembly in its resolution 68/216, is to be included also as an input for the discussion of the post-2015 United Nations development agenda, taking into account the three dimensions of sustainable development. The report draws on contributions to the fourth interactive dialogue on Harmony with Nature, held on 22 April 2014, during the commemoration of International Mother Earth Day.

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I. Introduction

1. In accordance with General Assembly resolution 68/216 on "Harmony with Nature", during its sixty-eighth session the President of the General Assembly convened a fourth interactive dialogue on the subject during the commemoration of International Mother Earth Day, on 22 April 2014, with the participation of Member States, United Nations organizations, independent experts, major groups and other stakeholders. The Secretary-General hereby submits to the Assembly his report on the implementation of resolution 68/216, including a discussion of the focused dialogue, to be included also as an input for the discussion of the post-2015 development agenda, taking into account the economic, social and environmental dimensions of sustainable development.

2. The purpose of the fourth interactive dialogue on Harmony with Nature was to examine the evolution of science, governance and economics in the light of new understandings of our interconnectedness with Nature, which, in turn, have led to practices that further an ethical relationship between humanity and the Earth and life in harmony with nature.

3. At the United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil, in June 2012, Heads of State and Government adopted an outcome document entitled "The future we want" (resolution 66/288, annex), in which they recognized that planet Earth and its ecosystems are our home and that "Mother Earth" is a common expression in a number of countries and regions, and noted that some countries recognize the rights of nature in the context of the promotion of sustainable development. They were also convinced that, in order to achieve a just balance among the economic, social and environmental needs of present and future generations, it is necessary to promote harmony with nature.

4. Major groups and other stakeholders, including non-governmental organizations (NGOs), indigenous groups and civil society organizations worldwide, have also voiced the need for humankind to recognize the fundamental rights of the natural world. On the margins of the United Nations Conference on Sustainable Development in 2012, major groups and other stakeholders at the "Rio+20 People's Summit" called on the Governments and peoples of the world to adopt and implement a "Universal Declaration of the Rights of Mother Earth". This same call was issued at the World's Peoples Conference on Climate Change and the Rights of Mother Earth, held in April 2010 in Cochabamba, Plurinational State of Bolivia.

5. Since 2012, there have been significant initiatives on sustainable development governance, including: policy documents calling for a new paradigm for "Living Well in Harmony with Nature" ("Vivir Bien en Harmonía con la Naturaleza" in the original Spanish text); new developments on "Rights of Nature" legislation in a number of countries worldwide; and use of the term "Mother Earth" has obtained wider recognition.

6. In September 2012, at the International Union for Conservation of Nature and Natural Resources World Conservation Congress and, in October 2013, at the tenth World Wilderness Congress, resolutions on the rights of nature were adopted.[1]

[1] See http://www.harmonywithnatureun.org/rightsofnature.html.

7. In December 2013, at the second session of the Intergovernmental Platform on Biodiversity and Ecosystems Services, the knowledge systems of living in harmony with nature and Mother Earth became essential elements of the adopted conceptual framework.[1]

8. Representatives of Member States speaking at the fourth interactive dialogue on Harmony with Nature in April 2014, expressed the opinion that these issues should be given appropriate consideration in the elaboration of the post-2015 development agenda.[2]

9. In June 2014, on the occasion of the Commemorative Summit on the fiftieth Anniversary of the Group of 77 and China held in Santa Cruz de la Sierra, Plurinational State of Bolivia, Heads of State and Government adopted the Declaration of Santa Cruz de la Sierra "Towards a New World Order for Living Well", which contains a significant number of explicit references that call for the "Living well in Harmony with Nature" paradigm, "rights of nature" and respect for Mother Earth.[1]

10. In his statement delivered at the above-mentioned Summit, the Secretary-General emphasized that if we neglect our Mother Earth, we will be denied the protection she offers, reiterating that we are already at a tipping point. He also reaffirmed the concept of "Living Well" as set forth in the Declaration of Santa Cruz de la Sierra, and stressed that humankind must redefine its relationship with Mother Earth and engage in a global transformation of attitude and practice. This transformation has already started to unfold.

11. The present report will, therefore begin by addressing the social dimension of sustainable development. In doing so, it will examine how the holistic relationship that indigenous peoples have had with Mother Earth since ancient times has paved the way in the modern world for scientists to look at the Earth as a holistic system, in which no single element takes precedence over another, a system that is indivisible, in an endless continuum, which scientists have named Earth system science.

12. Earth system science has paved the way for Earth system governance, Earth-based law and Earth-based economics, all of which are also addressed in this report. Each of these evolutionary changes, individually and together, point to a new path for us to ensure the well-being of the planet and its people.

II. "Living Well in Harmony with Nature": a scalable paradigm from the developing world[3]

13. The concept of "living well"[4] has emerged over the past 10 years, especially in South America. It is the search for a different way of thinking about lifestyles in reaction to current development models, from growth-oriented models based on the

[2] On 18 July 2014, in the outcome document of the Open Working Group on Sustainable Development Goals, harmony with nature was referenced in both the introduction and in goal 12.8

[3] This section draws from the work of Eduardo Gudynas entitled "Buen Vivir: Today's Tomorrow", 2011 (see http://www.palgrave-journals.com/development/journal/v54/n4/full/dev201186a.html).

[4] Vivir Bien or Buen Vivir in the Spanish original.

extraction of natural resources to a more holistic vision of the world that speaks to the indigenous cosmovision, in which the notion of prosperity based on material well-being and consumption does not exist.

14. One of the main exponents of Living Well, Uruguayan ecologist Eduardo Gudynas, explains that living well describes a good life in a broader sense. It is a concept with two main points: (a) it includes critical reactions to classical development theory, and (b) it refers to alternatives to current economic development models, alternatives that are emerging from indigenous traditions. In this sense the concept explores possibilities beyond the modern Eurocentric tradition.

15. The term living well includes the classical ideas of quality of life, but with the specific idea that well-being is only possible within a community. Furthermore, in most approaches the community concept is understood in an expanded sense to include nature. Living well embraces a broad notion of well-being that encompasses harmonious cohabitation with other humans and nature.

16. Two of the most well-known approaches to living well are the Ecuadorian concept of *sumac kawsay*, the Kichwa wording for a fullness life in a community, together with other persons and nature, and the Bolivian Aymara concept of *suma qamaña*. These concepts have received widespread attention, and in a short period of time, have met with broad social, cultural and political support. They offer valuable pathways to overcome the obsession with the word "development", as it is currently understood, and to explore alternatives within a pluricultural setting.

17. The work of Bolivian Aymara sociologist Simon Yampara offers a detailed and sophisticated elaboration of traditional knowledge that responds to the present challenge imposed by the current economic understanding of development. He explains that *suma qamaña* is not restricted to material well-being, as expressed in the ownership of property or consumption at the heart of capitalist societies, but is a harmonious balance between material and spiritual components, which is only possible in the specific context of a community, which itself is an integrated social as well as ecological unit. This social and ecological conception of community is linked to the Andean concept of the *ayllu*, according to which the notion of well-being encompasses not only persons, but also crops and cattle, and the rest of nature. The classical developmental dualism that separates society from nature vanishes in this perspective, as one contains the other and they are not divisible.

18. Living well expresses a process that is now under way and which offers new answers to post-development questions while reinforcing cultural identity and promoting alternatives to classic notions of modernity. It is important to highlight that living well is not restricted or exclusive to indigenous peoples. Other approaches to living well come from neglected groups within modern society who are critical of current economic beliefs.

19. An example of these alternative approaches is the work by Arturo Escobar, a renowned Colombian anthropologist who has undertaken a critical analysis of traditional notions of development and post-development. The analysis concludes that there is a need to reinforce concepts like *sumac kawsay* or *suma qamaña*.

20. The second example refers to environmental philosophies like deep ecology and other biocentric approaches which reject the anthropocentric perspective of

modernity and recognize intrinsic values in the environment: these are analogous to postures found in several indigenous perspectives of living well.

21. Living well promotes ethical perspectives that are grounded in values. It is a reaction against the current domination of utilitarian values, particularly as expressed in the reduction of life to purely economic values and the attendant commoditization of much of nature. Living well acknowledges that there are several ways to give value to life, including aesthetic, cultural, historical, environmental and spiritual elements. The omnipresence of capital categories (such as human capital and natural capital) are redefined to be just one way to give value and included within a broader framework of economics that supports holistic well-being.

22. In all of these approaches, intrinsic values are recognized. As a result, nature becomes a subject too. The vision promoted by living well strongly supports the need to explore alternatives beyond conventional knowledge. Thus, decolonization is also an aspect of living well. Living well respects its internal plurality of conceptions without hierarchies. The classical liberal approach of multiculturality is insufficient for this purpose, so an intercultural position is pursued. Living well is more than a simple coexistence or juxtaposition of different cultures, because they interact in dialogue and praxis focused on promoting alternatives to development.

23. Living well presents strategies such as legal reforms, the introduction of environmental accounting, tax reforms, the dematerialization of economies and alternative regional integration within South America and focusing on serving local and regional needs, rather than prioritizing the needs of global markets.

24. Living well advocates the dissolution of the dualism between society and nature. Nature becomes part and parcel of the social world and vice versa, and as such communities could extend to non-human forms of life. This is consistent with, for example, biocentric environmental perspectives and also indigenous positions that recognize that non-human beings (animals, plants or ecosystems) should all have rights. Thus, the polis is expanded, and the concept of citizenship is widened to include nature.

III. Earth system science

25. A long-held viewpoint concerning human-environmental relationships, the human exemptionalism paradigm, sees human beings as separated from other species, and from the environment, as masters of the planet. The historical origins of the doctrine have already been addressed in detail in the two previous reports of the Secretary-General on Harmony with Nature (A/65/314 and A/66/302). In brief, scientists have admitted for decades that this 300-year-old scientific doctrine is too simplistic and have found that physical substances work and exist through highly complex, interdependent and changeable contexts and relationships.

26. Scientists have embraced a holistic view of the Earth and acknowledged that all the elements are interconnected, and changes in any one single element affect the functioning of the others in countless and, often unknown, ways. Scientists refer to this holistic view of the Earth as Earth system science.

27. Professor Mark Lawrence, of the Institute for Advanced Sustainability Studies, explains that the complex Earth system is composed of the atmosphere, the lithosphere (the solid earth), the hydrosphere (liquid water in the oceans and rivers,

as well as atmospheric water vapor and liquid and ice in clouds), the cryosphere (the frozen earth), the biosphere and the anthroposphere. The anthroposphere includes both the technosphere, all of our industrial development and the noosphere, which is our collective consciousness.[5]

28. Each of these elements is connected with each other in space and time through the innumerable processes taking place in the Earth system, and these connections result in an immense complexity. Thus, looking at any one component in isolation gives only a very limited picture of its behaviour in the context of the Earth system as a whole.[5]

29. This complexity and this degree of interconnectedness across all the elements have been gradually recognized by scientists in the way they look at the Earth. For example, looking back at the 1970s, climate models were fairly simple and only represented the atmosphere and the input from solar radiation. In the 1980s, surface processes like hydrology were introduced. In the 1990s, the atmospheric models were coupled to models of the ocean and sea ice, and over the last decade a major development has been the inclusion of dynamic vegetation models, and improvements in the way that we represent the human influences on the environment.[5] Ecology itself is a science that has grown tremendously in the period since many environmental laws were passed in the early 1970s.

30. Institutes currently participating in the Intergovernmental Panel on Climate Change are now using complex Earth system models rather than simple climate models. They recognize that we are daily learning more on how each of these components and the many processes that occur in the Earth system are represented in these models. In studying these models, the more we learn, the more worrisome the results generally tend to be.

31. The many connections between the different components of the Earth system demonstrate complex natural cycles that connect the atmosphere, the biosphere and the hydrosphere. The following example provides a systemic view of their functioning involved, which itself points to the need for further caution in our actions in order to prevent additional, unanticipated, damage.

32. Laboratory studies show that phytoplankton grow more effectively in warmer waters and when they receive more sunlight. Phytoplankton are key factors in the life of oceans, seas and freshwater basins, producing, inter alia, a gas called dimethylsulfide (DMS). DMS builds up in the surface waters of the oceans and escapes to the atmosphere, where it is converted into other forms of sulfur-containing gases, such as sulfuric acid. Sulfuric acid molecules tend to condense into tiny particles. These particles are important for the formation of clouds, and normally when we have more of these little particles, the same amount of water in clouds will be spread across a greater concentration of smaller droplets, which makes them brighter.[5]

33. As the oceans warm, more DMS is produced and introduced into the atmosphere, creating brighter clouds which reflect more sunlight into the upper atmosphere, thus reducing the amount of sunlight reaching the ocean surface and acting against the initial warming.[5]

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[5] Mark Lawrence, "The 'Anthropocene' — Humans in the Earth System", second interactive dialogue on Harmony with Nature, April 2012 (www.harmonywithnatureun.org).

34. In other words, the initial warming effect, as a result of interactions in the biosphere, hydrosphere and atmosphere, leads to a reduced level of warming. What is not yet clear is how strong this negative feedback is, that is, by how much the initial warming is decreased, or even if the process really works that way, since many other factors could interfere, for instance, changes in wind speed or in the mix of phytoplankton species in warmer waters.[5]

35. When Arctic waters are warmed, the resulting decrease in the amount of sea ice makes the waters darker, so that they absorb more sunlight, heat up more quickly, and lead to even greater warming and further reduction of sea ice. This is an example of the extreme complexity of nature.[5] How do humans influence the Earth system?

36. On 12 May 2014, two groups of scientists reported that a large section of the mighty West Antarctica ice sheet has begun falling apart, and its continued melting now appears to be unstoppable. They suggest that the melting could destabilize neighbouring parts of the ice, and a rise in sea level of 10 feet or more may be unavoidable in coming centuries.

37. Scientists advance that global warming caused by the human-driven release of greenhouse gases has helped to destabilize the ice sheet, although other factors may also be involved. They also add that sea level rise is likely to continue to be relatively slow in the near-term but that it may accelerate markedly at some point in the future, potentially throwing society into crisis.

38. The new findings appear to be the fulfilment of a prediction made in 1978 by an eminent glaciologist, John H. Mercer of Ohio State University, who outlined the vulnerable nature of the West Antarctica ice sheet and warned that the rapid human-driven release of greenhouse gases posed a "threat of disaster". He was assailed at the time, but in recent years, scientists have been watching with growing concern as events have unfolded in much the way Dr. Mercer predicted.

39. At the dawn of the twenty-first century, the effects of humanity on the planet, including the impacts of the energy, manufacturing and transport sectors, have resulted in habitat destruction, water pollution, soil degradation and noise pollution.

40. The dark side of human activity is reflected in many impacts, including those reported by the Intergovernmental Panel on Climate Change: extensive modification of natural cycles of elements like carbon and nitrogen, depletion of many natural resources, rising sea levels, desertification, intensity of extreme events like droughts, floods, hurricanes and innumerable extinctions.

41. There have been great mass extinctions during the history of life on this planet. These extinctions describe events that led to a profound loss of biodiversity. The most devastating took place at the end of the Permian period, some 250 million years ago, and it came perilously close to emptying our Earth of life altogether. This event is sometimes referred to as the "mother of mass extinctions" or "the great dying".[6] Scientists now suggest that loss of biodiversity may rival climate change in its negative impacts on the well-being of natural systems.

42. Most recently, an alarm has been fiercely sounded regarding the disappearance of bees. Bees, which have been domesticated by humans for some 13 millennia,

[6] Elizabeth Kolbert, *The Sixth Extinction: An Unnatural History*, Henry Holt & Cie, 2014.

pollinate a substantial portion of the plants we consume; one calculation has it that every third bite of the food we eat was pollinated by a bee.

43. Domesticated bees represent roughly two thirds of the total bee population in the world and are a major player in agricultural production. The population of bees, domestic and wild, fluctuates considerably from year to year. Drought reduces the amount of wild food available that bees need to survive. Storms and natural disasters can wipe out colonies already weakened by human disturbance, ravaging populations.

44. Professor Barbara Baudot of Saint Anselm College, New Hampshire, and panellist at the fourth interactive dialogue on Harmony with Nature states that:

> "The futility of taking a fragmented approach to nature and environmental problems is well illustrated by the tragic situation of the honey bee presently encountered in many parts of the world. By selectively reducing the hive to a mobile pollinating factory for human enterprises, industrial beekeepers have disturbed the harmony of the hive: the bees are stressed, their instincts all but destroyed, their food poisoned by pesticides or uprooted to make place for monocultures with their short blossoming periods."

A focus on the development and use of only commercial crop varieties and breed is only one of the many threats stalking the maintenance of biodiversity in our modern world.

45. On 9 May 2014, the Harvard School of Public Health released a new study suggesting that the use of even small amounts of neonicotinoids-based insecticides can significantly harm honeybee colonies and cause massive wintertime die-offs. In the study, the Harvard scientists found that hives of bees exposed to two forms of neonics were much more vulnerable to colony collapse disorder than unexposed hives.

46. Neonics, the short form for neonicotinoids, are a class of neuro-active insecticides chemically similar to nicotine. The development of this class of insecticides started in the 1980s. Neonics are the first new class of insecticides to be developed in the last 50 years and they are the most widely used insecticide in the world.[7]

47. Another group of species that is also registering significant population declines leading to extinction are amphibians; up to 40 per cent of amphibian species are now threatened with extinction. Scholars David B. Wake and Vance T. Vredenburg argue that, based on current extinction rates among amphibians, an event of a similarly catastrophic nature like the "great dying" is currently under way.[8] If Wake and Vredenburg are correct then today we are not only witnessing one of the rarest events in life's history but also causing it. "One weedy species" the pair observed, "has unwittingly achieved the ability to directly affect its own fate and that of most of the other species on this planet".[6]

48. In light of the alarming rate at which biodiversity is being lost, and in view of its indispensable role in food production and agriculture, the Food and Agriculture Organization of the United Nations (FAO) will issue a country-driven report on the

[7] See http://www.xerces.org/neonicotinoids-and-bees.

[8] See http://www.pnas.org/content/105.

state of the world's biodiversity for food and agriculture in 2017, highlighting the contribution that biodiversity, be it the insects that pollinate plants, the microscopic bacteria used in making dairy products or the thousands of varieties of crops and cattle that sustain food security worldwide, makes to food security, livelihoods and environmental health. In the face of present and future social, economic and environmental changes, genetic diversity represents an invaluable repository of traits that can be used to improve the sustainability, resilience and adaptability of food production systems, as well as to ensure the long-term well-being of the natural world.

49. Humanity needs to make all possible efforts to halt the loss of biodiversity, which also impacts food and agriculture. Local communities and researchers rely upon biodiversity to improve the quality and output of food production. When natural systems are eroded, humankind loses the potential of adapting food production to changing socioeconomic and environmental conditions, such as are resulting already due to climate change.

IV. Earth system governance

50. Earth system science has evolved from Cartesian, cause-and-effect, duality science to a form of study that embraces the complexity of life. It has informed and given place to Earth system governance, which draws upon the holistic scientific knowledge provided by Earth system science to evolve laws and policies that better manage human behaviour in light of the interconnections among people and nature. Both Earth system science and Earth system governance continually and mutually reinforce each other regarding a holistic vision for the planet.

51. Given that no species and few ecosystems have remained unaffected by the expansion of the human species, the Earth System Governance Project was established in 2007 as a direct result of the evolving understandings of Earth system science. Diversitas, the International Geosphere-Biosphere Programme, the International Human Dimensions Programme on Global Environmental Change and the World Climate Research Programme are the four main programmes associated with the project. These programmes, in their individual capacity, have existed since the 1990s, but it became apparent that they could not individually address integrative questions on the Earth system, especially those relating to fundamental issues of energy (carbon), food, water and health.

52. Today the four programmes provide evidence that the entire Earth system now operates well outside the normal state exhibited over the past 500,000 years, and that human activity is generating changes that extend well beyond natural variability. It has become obvious that the institutions, organizations and mechanisms by which humans currently govern their relationship with the Earth and its complex biochemical systems are not only insufficient but also poorly understood. With the creation of the Earth System Governance Project it is clear that governance, like science, has been moving towards the same holistic approach to understanding humankind's role on the planet and how much humans are part of nature.[9]

[9] http://www.earthsystemgovernance.org/about.

53. The Earth System Governance Project is the largest social science research network in the area of governance and global environmental change. The international research programme takes up the challenge of exploring political solutions and novel, more effective governance systems to stem and reverse the current, negative transitions in the biogeochemical systems of our planet. The normative context of the research is sustainable development, in which Earth system governance is seen not only as a question of effective governance, but also as a challenge for political legitimacy and social justice.[9]

54. The notion of governance refers here to a less hierarchical structure than that in traditional governmental policymaking (even though most modern governance arrangements will also include some degree of hierarchy), a form of government that is more decentralized, open to self-organization and inclusive of non-State actors that range from industry and NGOs to scientists, indigenous communities, city governments, international organizations and the public at large.[9]

55. Professor Frank Biermann, of the VU University in Amsterdam, Chair of the Earth System Governance research alliance, and panellist at the fourth interactive dialogue on Harmony with Nature, further explained that the Earth System Governance Project reflects a major paradigm change in our understanding of the Earth, since today we are no longer facing challenges that can be accurately described by the term "environmental policy". Instead, humankind is faced with a fundamental transformation of core elements of the entire Earth system significantly induced by human behaviour that requires new approaches.

56. Professor Biermann further explained that today Earth system governance is one of the key challenges for policymakers and Governments as well as for the collective institutions that Governments have created. Most prominently, it is a key challenge for the United Nations. Given the complexities that we face, Professor Biermann stressed the need to engage in a process of serious reform on international governance and institutions:

> "We cannot resolve the problems of the twenty-first century with institutions that function with rules that essentially stem from the nineteenth century. Therefore, it has become imperative to explore, both scientifically and politically, new types of multilateralism. In doing so, a reform of the intergovernmental system will not be the only level of societal change nor the only type of action that is needed toward sustainability. Changes in the behavior of individual citizens, in societies, new engagement of civil society organizations and reorientation of the private sector toward a sustainable economy, are all crucial to achieve progress. Yet, in order for local and national action to be effective, the global institutional framework must be supportive and well designed".[10]

57. It has been recognized that environmental policy no longer addresses the full range of challenges that we face in terms of sustainability, and the same holds true of environmental legislation. Since the 1960s, when the promulgation of environmental legislation began in earnest, and now five decades later,

[10] Frank Biermann, "Governance in the Anthropocene: Towards Planetary Stewardship", fourth interactive dialogue on Harmony with Nature, 22 April 2014 (www.harmonywithnatureun.org/index.php?page=view&type=12&nr=40).

environmental legislation has failed to protect the basic structure and integrity of the Earth's ecosystems.

58. Linda Sheehan, the Executive Director of the Earth Law Centre, panellist and moderator, respectively, at the third and fourth interactive dialogues on Harmony with Nature, stated that "environmental legislation has ignored the interconnection of water, air, land and wildlife. Present single-stressor laws missed the fact that humans could transform whole ecosystems through air pollution on a global scale. Hence, a legal system based on recognizing that ecosystems, in all aspects, have inherent rights to health, prosperity and evolution is gradually becoming the norm.[11]

59. Ms. Sheehan further recalled that under an Earth-based legal approach, the two-way relationship is fundamental: without reciprocal respect for protecting human and natural rights, laws will bias advantages to one side or the other. The objective is a legal system founded on equal fundamental rights and responsibilities — one that reflects and implements the mutually enhancing relationships that exist among humans and the natural world. What is needed is a corpus of Earth law integrating modern science and ethical awareness of our moral responsibilities as humans. If we are to survive as an ethical and physical species, we must legislate a system of Earth-based law to mirror our expanding scientific and ethical "awareness" and our place in the Earth community.

60. Communities around the United States have already started to adopt laws reflecting these relationships. Driven to action primarily by outside attempts to injure local waterways and lands, municipalities are adopting ordinances that specifically recognize an "enforceable right of natural communities and ecosystems to exist and flourish".[1]

61. In August 2012, in New Zealand, an agreement was made between the Whanganui Iwi and the Crown recognizing, inter alia, that the Whanganui River is a living being and that the people and River are inseparable, and granting statutory recognition of the River as a legal entity with standing in its own right.[1]

62. The Supreme Court of India, in its verdict on the legal case of T. N. Godavarman Thirumulpad v. Union of India (2012) found that environmental justice requires moving away from anthropocentric to ecocentric principles. Sustainable development, the polluter-pays principle and intergenerational equity have their roots in anthropocentric principles centred on human interests. The non-human has only instrumental value to humans. Ecocentrism however is centred on nature, viewing humans are part of nature, and the non-human is granted intrinsic value.[1]

63. Fander Falconí, Ecuadorian economist and scholar and panellist at the fourth interactive dialogue on Harmony with Nature, argued for the need to build a sustainable society respectful of the environment, both as a matter of principle and as a matter of rights. He called for extending rights to nature in the same way that rights have been extended to humankind. Rights of nature are, in Falconí's view, becoming part of international discussions on matters of environmental justice.

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[11] Linda Sheehan, "Earth Day Revisited: Building a Body of Earth Law for the Next Forty Years", in *Exploring Wild Law: The Philosophy of Earth Jurisprudence*, Peter Burdon, ed. (Wakefield Press, Kent Town, South Australia, 2011).

64. In 2008, Ecuador became the first nation to adopt a constitutional provision endowing Nature with inalienable, enforceable rights. Its new Constitution states that: "Nature or Pachamama, where life is reproduced and exists, has the right to exist, persist, maintain and regenerate its vital cycles, structure, functions and its processes in evolution". The Constitution states that the rights of nature should be taken into account in an integral manner, including the maintenance and regeneration of its cycles, functions and evolutionary processes, and the right to restoration.[I]

65. The first court victory for the rights of nature took place in Ecuador in 2010, when local plaintiffs sued on behalf of the rights of the Vilcabamba River. The local government had initiated a road expansion project, dumping debris into the river, affecting the river's flow and causing local flooding. The court found that the river's constitutional rights to flow had been violated and charged the provincial government with repairing the damage.[I]

66. Since 2007, the new policy of the Plurinational State of Bolivia has embodied the concept of "Living Well" ("Vivir Bien"), not only in terms of income but most importantly in terms of respect for cultural identity, community and harmony among human beings and between human beings and nature. Early in 2009, a new Constitution was promulgated on the basis of such principles. In December 2010, a new Law on the rights of Mother Earth was passed, granting her the following seven rights: the right to life and to exist; the right to not have cellular structure modified or genetically altered; the right to pure water; the right to clean air; the right to balance; the right to continue vital cycles and processes free from human alterations; and the right not to be polluted. In October 2012, the Framework Law for Mother Earth and Integrated Development for Living Well was adopted.[I]

67. On 17 October 2013, in the Federal District of Mexico, the Environmental Law for the Protection of the Earth entered into force. The law, inspired by the legislation passed by the Governments of the Plurinational State of Bolivia and Ecuador to protect Mother Earth, also recognizes the Earth as a living being.[I]

68. The rights and remedies included in new environmental legislation reflect the recommendations of University of Southern California law professor Christopher Stone, who wrote in 1972 that nature should have standing in a court of law, and that its legal rights must be enforceable on its behalf as the injured entity, and must include remedies that run to the benefit of the injured holder of the right, in this case, the environment. Actions by the public on behalf of the natural world are essential to such a rights-based, Earth law system.[II]

69. Creating a system of Earth law that recognizes the equal inherent rights of all Earth's community members to struggle, thrive and evolve together is a daunting task. Modern science and ethics increasingly lead us to appreciate the many benefits of respectful relationships with the natural world. As science has evolved to recognize the interconnections between people and nature, so too are we evolving Earth-based laws and governance systems that embed and implement such mutual and respectful rights.[II]

V. Earth-based economics

70. The holistic worldview advanced by Earth system science has informed and given place to Earth-based laws and governance, as well as Earth-based economics, which similarly draws upon Earth system science in the development of a new, scientifically based economics.

71. At the 2013 Parliamentary Hearing held at United Nations Headquarters, which brought together close to 200 parliamentarians from a range of countries to discuss the theme "Re-thinking sustainable development: the quest for a 'transformational' global agenda in 2015", the issue of the "growth dilemma" was discussed from both the economic and environmental perspectives. The new thinking arises not just from ecological considerations, although unbridled growth is a factor of negative developments such as climate change or biodiversity loss, but from a recognition that the growth-based economy relies unsustainably on exploitation of the natural world.[12]

72. Parliamentarians pointed that for the growth-based model to remain stable it must nurture a consumerist culture in which people are hooked on buying more things. This culture is justified on the grounds that such consumption is needed to ensure jobs and tax revenues. Without such a model, experts claim that unemployment will go up, consumption will go down, government deficits will increase, public expenditures will decrease, loan defaults will rise, investment will drop and the economy will spiral into collapse. To avoid that spiral, the world chases ever more growth, building a complicated set of relationships based on a growing number of people working to produce increasing quantities of goods for people to buy, investing their savings in consumption, continually pursuing the growth needed to keep economic stability alive".[12]

73. Vaclav Smil, Canadian scientist, policy analyst and Professor Emeritus in the Faculty of Environment at the University of Manitoba in Winnipeg, has written extensively on the environment, food production and energy. When asked about consumption rates, he explains that when we look at our iPhones we may think that we no longer need clocks, telephones, cameras, compasses or maps, that we need only the one item, the smartphone, and we may get the impression that we are using fewer products. It has been estimated, however, that 1 billion cell phones are thrown away every nine months. Therefore, dematerialization is only happening in relative terms.

74. He further compares this to the increase in energy seen due to efficient energy consumption. Households now have, instead of one, more televisions, refrigerators and cars than in the past. In other words, per unit consumption is down, but overall consumption is up.

75. Representatives of Member States speaking at the fourth interactive dialogue on Harmony with Nature further noted that, given the work currently being undertaken by scientists, academia and civil society on the precariousness of life on Earth, a paradigm shift in which nature is no longer treated as a commodity is necessary if we are to achieve sustainable development.

[12] Inter-Parliamentary Union, Annual Parliamentary Hearing at the United Nations, "Rethinking sustainable development: the quest for a 'transformational' agenda in 2015", Summary report, November 2013.

76. At the 2013 Parliamentary Hearing, Parliamentarians expressed opinions in line with the well-known views of the Secretary-General as well as of the Secretary-General of the Inter-Parliamentary Union, which are set out in his statement to the High-Level Political Forum on Sustainable Development on 7 July 2014.[13] Parliamentarians agreed that resolving the growth dilemma requires a new approach to human well-being, which, in turn, requires reflection about what prosperity really is. Clearly, it is not increasing material growth or ever more consumer affluence. Prosperity is as much as our psychological and social health, our ability to immerse our senses in the nature around us, and our sense of belonging in society, as it is about acquiring things. It is the art of living well on a finite planet".[12] This necessarily includes the well-being of nature herself.

77. In support of this new reflection, the Stiglitz Commission, established in 2007, recognized the gross domestic product (GDP) as a measure of output and not of well-being, where well-being is a multidimensional concept that covers material living standards and the non-monetary aspects of quality of life. The need of having a valid alternative to GDP has been recognized in previous reports of the Secretary-General as an essential component to live in Harmony with Nature (see A/65/314, A/66/302 and A/67/317).

78. The outcome document of the United Nations Conference on Sustainable Development, "The future we want" laid the foundation for the creation of the Friends of the Chair Group to work on an alternative to GDP (resolution 66/288, annex, para. 38). On February 2014, the Statistical Commission of the United Nations, at its forty-fourth session, established the Friends of the Chair Group on broader measures of progress as a response to the request of the Conference that it launch a programme of work on broader measures of progress to complement GDP and better inform policy decisions.

79. In their findings, the Group reaffirmed the analysis made earlier by the Stiglitz Commission regarding GDP: that is, that indicators of material well-being have to go beyond GDP. "Sustainability over time can be assessed by looking at the set of key economic, environmental, social and human assets transmitted from current to future generations, and how these assets are affected by today's actions, policies and behaviours".[14]

80. The Economic and Social Commission for Asia and the Pacific (ESCAP), in his flagship report entitled "Shifting from quantity to quality: growth with quality, efficiency, sustainability and dynamism", issued in December 2013, highlights that "short-term growth strategies aimed at maximizing GDP growth have created a 'vicious cycle' of growth driven by the exploitation of human and natural capital. Achieving sustainable development requires shifting to a 'virtuous cycle' of investment in people and the planet — where economic growth is a means for shared prosperity and human well-being within planetary limits — rather than a goal in itself".

81. A new Earth-based economic model would embody an image of the human being that is fundamentally different from the narrow understanding of neoclassical

[13] Remarks by the Secretary-General of the Inter-Parliamentary Union, Mr. Martin Chungong, at the High-level Political Forum on Sustainable Development, ministerial dialogue on a "Universal Integrated Policy Agenda to Implement Rio+20 and realize the Future we Want".

[14] E/CN.3/2014/4, para. 14.

economics, which assumes that all individuals are driven exclusively by their own interest.[12] Under this new Earth-based economic system, human well-being and prosperity would no longer be at the Earth's expense, but instead would serve the Earth. This system is consistent with the findings of the four previous reports of the Secretary-General as an essential component for living in harmony with nature, recognizing that ecological economics (rather than the marketization of nature) is necessary to ensure the well-being of both planet and people, which are intimately interconnected.

82. At the fourth interactive dialogue, some Member States reflected that living in harmony with nature must also mean upholding the principle of equity and ensuring an equitable sharing with nature to ensure its continued health. They stressed that current consumption patterns and modern lifestyles such as those made popular in the developed world are not only unsustainable but also inequitable, and that we must find new pathways for transition to a culture of a more frugal living, less wastage and greater equitable sharing of resources.[15]

83. Sustainable agriculture is an example of such a pathway. Jim Gerritsen, a panellist at the fourth interactive dialogue on Harmony with Nature, owns and operates an organic farm in the northeastern United States. Mr. Gerritsen pointed out that organic farming is one approach to sustainable agriculture that seeks to fundamentally be in harmony with nature as it aspires to replicate the complex natural living systems of Mother Earth. Organic farming involves maintaining the health, quality and fertility of the soil so that plants are wholesome and life-sustaining.

84. According to Gerritsen, a growing number of scientific studies make clear that organic farming is a superior production system when it comes to metrics of food quality, food sovereignty and resilience in the face of climate change. One of the most important studies supporting a shift to organic farming, "Wake up before it is too late: make agriculture truly sustainable now for food security in a changing climate", was issued by the United Nations Conference on Trade and Development in September 2013.

85. Permaculture is another example of agricultural method currently being applied that also seeks to be in harmony with nature. Permaculture is a branch of ecological design, ecological engineering, environmental design, construction and integrated water resources management that develops sustainable architecture, regenerative and self-maintained habitat and agricultural systems modelled from natural ecosystems.

86. Permaculture implies working with, rather than against nature, protracted and thoughtful observation rather than protracted and thoughtless labour, and considering plants and animals together, rather than as separate product systems.[16]

87. The techniques and strategies of sustainable farming may vary depending on location, climatic conditions and resources available, but while the methods may differ, the principles of this holistic approach remain constant.[16]

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[15] See http://www.harmonywithnatureun.org/index.php?page=view&type=12&nr=40.

[16] Bill Mollison on permaculture (see http://en.wikipedia.org/wiki/Permaculture#cite_note-4).

VI. Conclusion and recommendations

88. Climate change is an increasingly pressing concern and a top priority for the United Nations. According to the Intergovernmental Panel on Climate Change, the average surface temperature of the Earth will rise between 2.5 degrees and 10.4 degrees Fahrenheit within the next 100 years if our greenhouse gas emissions are not soon reduced. While a 2 degree may seem small, one must note that the Earth's average temperature has stayed within a variance of no more than 1.8 degrees Fahrenheit for 10,000 years. A few degrees of average temperature change make the difference between an ice age and the present climate of the Earth.[17]

89. The importance of every single degree of rise in global temperature can no longer be dismissed since a 10 degree increase in the Earth's temperature is as important as a 108 degree fever in our bodies. There is no magic remedy that will cure this temperature rise overnight, because carbon dioxide can persist for up to a few centuries in the atmosphere.

90. Human health is thus inextricably linked to the health of the planet and living and producing in harmony with nature. Inexorably, climate change will severely affect global public health. To address this challenge, the World Health Organization will host the first global Conference on Health and Climate from 27 to 29 August 2014 in Geneva.

91. Within this decade, humanity must intensify efforts to restore a healthy environment for present and future generations. People must seek a world where all human activity takes place in balance with the Earth's offerings, and with reciprocity, dignity and respect for nature. If we humans are to succeed as a species, we need to redefine wealth as something more than financial accumulation and closer to seeking well-being in harmony with nature and by transforming the dominant economic and legal paradigms as indicated above.

Recommendations

92. **In light of the foregoing discussion, and in order to provide insights and inputs from the ongoing debate on Harmony with Nature to preparations for the post-2015 development agenda, the Secretary-General submits the following recommendations:**

(a) **Invite the existing Harmony with Nature knowledge network of practitioners, thinkers and academicians who work at the cutting edge of their natural and social sciences, including physics, chemistry, biology, ecology, economics, sociology, law, ethics, anthropology, medicine and linguistics, to further advance the conceptualization of a new development paradigm that reflects the principles, drivers and values of living in harmony with nature, relying on current scientific information, particularly from centres of excellence on economic, social and environmental sciences;**

(b) **Support, through the Harmony with Nature website (www.harmonywithnatureun.org), the work being undertaken by Member**

[17] Intergovernmental Panel on Climate Change, Working Group II, "Climate Change 2014: Impacts, Adaptation, and Vulnerability", 31 March 2014.

States, major groups and other stakeholders, and the growing knowledge network on the subject, in keeping with the "The future we want", in order to showcase holistic and integrated policies to guide humanity towards a life in harmony with nature and the restoration of the health and integrity of the Earth system;

(c) Ensure through balanced debates and discussions in all preparatory activities for the post-2015 development agenda that the needs of both the planet and its people are equally taken into account.